Small Business Innovation Research/Small Business Tech Transfer

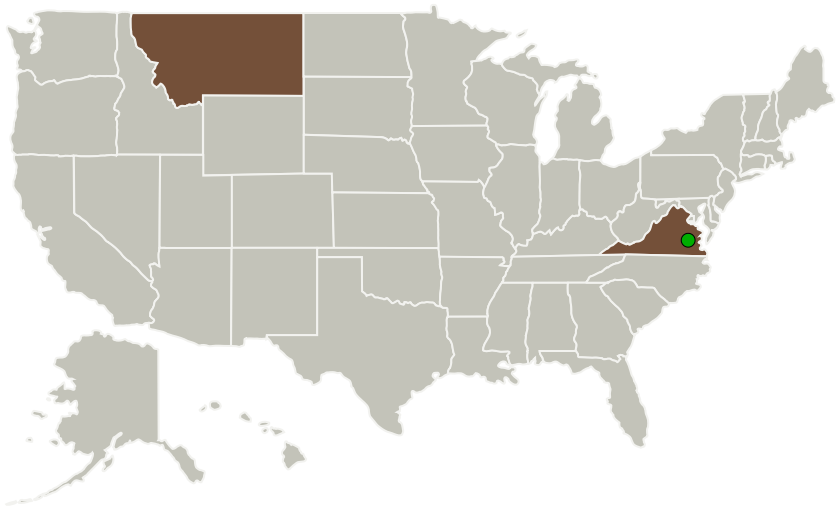
Iodine Stabilized Seed Laser for Space Applications, Phase I

Completed Technology Project (2013 - 2013)

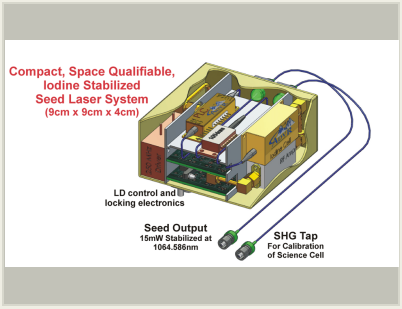
Project Introduction

This SBIR Phase I effort proposes to establish the feasibility of leveraging advances in compact laser technology with integration of space qualified techniques into AdvR's Planar Lightwave Circuit (PLC) and iodine reference cell technology for the design of a space qualifiable, frequency stabilized seed laser system in support of NASA Langley's High Spectral Resolution Lidar (HSRL) program. The Phase II effort will focus on space qualifiable systems integration, packaging, and testing of the locked seed laser system under applicable environmental conditions. Successful development of this technology, due to its compact, efficient, and reliable design, will enable further uses of the HSRL-based remote sensing system both in current flight-based systems and in future space-based systems.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
ADVR, Inc.	Lead Organization	Industry	Bozeman, Montana
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



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Primary U.S. Work Locations	
Montana	Virginia

Project Transitions

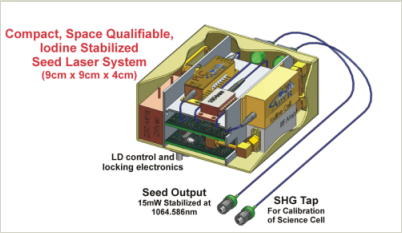
May 2013: Project Start

November 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140429)*

Images



Project Image
Iodine Stabilized Seed Laser for Space Applications
(https://techport.nasa.gov/image/135225)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
ADVR, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Shirley Mcneil

Co-Investigator:
Shirley Mcneil

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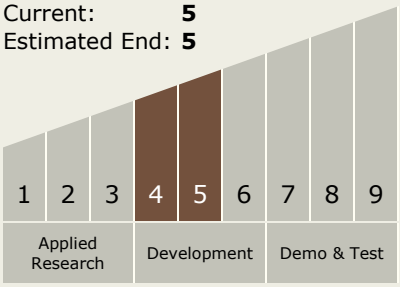
Technology Maturity (TRL)

Start: **4**
Current: **5**
Estimated End: **5**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System